INTERVIEW WITH TOM MAHON

"RENAISSANCE IN SILICON VALLEY"

FROM The Famous Computer Cafe

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Many of us are familiar with the technological innovations that have come out of Silicon Valley. By now, the microcomputer, the microchip and even silicon itself are household words across America. What most of us don't realize is that this valley, just miles south of San Francisco, is nothing less than the birthplace of a New Age Renaissance. For author Tom Mahon, Silicon Valley is, in essence, a latter day version of Thirteenth Century Florence where ideas that will have an impact on our civilization for centuries to come are being born. We talked with Tom about Silicon Valley and his book, Charged Bodies.

TFCC: Why did you create a book like this?

Mahon: Silicon Valley is something that deserves coverage, not as a technical phenomenon and not as a business phenomenon but as a human and psychological phenomenon. Silicon Valley is such a remarkable place that fiction couldn't convey the fascination of it. That's why I wrote a non-fiction book. I wasn't so interested in who invented what, when and how that led to other inventions. I wanted to talk to the people and find out what Silicon Valley has done to them, what drives them, and what do they think their contributions have been to Silicon Valley culture and to world culture.

TFCC: Give me a sampling of some of the works that you used to put this work together.

Mahon: One Saturday evening, coming back from the library with my weekly dose of research material, I looked and saw on the back seat of my car a monograph on the invention of the junction transistor, a book on medieval economics, and a book published by the Junior League in Palo Alto of great houses of the Santa Clara Valley. And I thought, "How do you create a work that synthesizes all these different things and is still readable by a general audience?" To the extent I've succeeded or failed, I can't judge. But what I wanted to do was to look at Silicon Valley as a human phenomenon.

TFCC: My sense is that you see this time in Silicon Valley as being much like a Renaissance period.

Mahon: Exactly. If somebody wanted to think of Silicon Valley only as a technical or a business phenomenon, they could compare it to Pittsburgh or Detroit. But I think Silicon Valley is more appropriately compared to 13th Century Florence or 19th Century Paris, places where a remarkable collection of people came together and interacted in a whole range of fields - medicine, art, philosophy, as well as business and technology. What's going on in Silicon Valley is the creation of a new kind of world culture that will be with us well into the 21st Century.

TFCC: Is there a pervading philosophical ideology in Silicon Valley?

Mahon: Well I nicknamed it "Paradox Valley" in the book because there are so many paradoxes there. A lot of people in Silicon Valley are trying to make a million in a short period of time. On the other hand, when you get to know these people, you see that the drive for money isn't the biggest thing. They are trying to create a microculture. You've got such paradoxes, for instance, as the fact that in Silicon Valley, where you have this drive to create a lot of wealth, you've got communities named after St. Francis and St. Clair who, in Christian tradition, turned their back completely on worldly gains.

TFCC: Let's pull a couple of names out. Robert Noyce, for example, is an entrepreneur that you mention in your book. Why did you pick him?

Mahon: Robert Noyce started with Shockley Semiconductor in Palo Alto, a company from which many companies can trace their roots. He and several of his colleagues then went on to form Fairchild Semiconductor. And it was from Fairchild that about seventy other key companies in Silicon Valley evolved. He's both a technical person as well as a very accomplished businessman. While he was at Fairchild, he co-invented the integrated circuit. (A man named Jack Kilby was working on a similar product at Texas Instruments.) And that integrated circuit began to change all the rules. Finally Noyce started a company call Intel. And several employees at Intel, about ten years ago, created the microprocessor, as fundamental a new technical development as the printing press or the wheel.

TFCC: Why?

Mahon: Because it allows intelligence to become portable, lightweight, easy to carry. And it may well be the thing that brings back together art and science and serves as a bridge between those two communities. It may even give us a sense of how the material world and the spiritual world interact. The thing about the microprocessor is that it's full import probably won't be discovered until some time down the road.

TFCC: When an entrepreneur comes up with an idea, he or she generally doesn't have the capital to launch a business. So he goes to a venture capitalist. You mentioned Arthur Rock.

Mahon: Arthur Rock is one of the premier venture capitalists. In fact, he coined the term "venture capital" back in the mid-1960s. He was working with a New York investment firm when the original group left Shockley to go off and start Fairchild Semiconductor. He has seen the whole industry evolve. He's a successful financier, and he comes out of a liberal arts or a humanist tradition and is able to look at it all from the eyes of a Renaissance man.

TFCC: What is it that really impresses you about Silicon Valley?

Mahon: The technologies of Silicon Valley are so difficult for a layperson to understand that the popular impression of Silicon Valley has been a very superficial one, just a lot of fast tracking people in their hot tubs. But there are all kinds of things going on there. There are artists working there, doing really remarkable things. There are philosophers. We really are, in Silicon Valley, seeing the leading edge of new outlooks, not just about technology or business but about our place in the universe and our place in the material and spiritual worlds.

TFCC: In your book, you talk about some of the artists. For instance, Scott Kim, a visual artist. Tell me about him and why you focused on Scott.

Mahon: Scott gives a lot of thought to the nature and the shape of letters. Now, on the surface that might seem interesting but so what. But picture a capital letter "a", a small letter "a," a handwritten letter "a" and a typed letter "a." There's four distinct shapes and yet we all refer to then as "a" shape. He's given a lot of thought to that and done a marvelous book called Inversions, A Catalogue of Calligraphy. A lot of his work is computer generated. Most people think of computer art as being sterile and devoid of any personality. When you look at the rich, sinuous lines in his work you see that the computer is capable of marvelous, evocative kinds of work. Scott is showing that computer art can have soul.

TFCC: Who are some of the critics of the microcomputer industry and Silicon Valley?

Mahon: Two people in particular are raising some very good questions. There is an organization called The Silicon Valley Toxics Coalition which very early on realized that there are dangerous chemicals in semiconductor manufacturing and questioned whether they were being disposed of properly. As it turns out, there have been underground leaks in the holding tanks for these chemicals and the chemicals have begun to leach out into the water table. Of course, if you pollute a water table, there's no way to clean it up and it becomes polluted from then on. The Santa Clara Valley has always had a rich tradition as an agricultural area, and if that water table gets polluted, there will be severe ramifications for the whole community, not just of Silicon Valley but of the whole Santa Clara Valley.

TFCC: So even though we have this great technology that allows us to do incredible things, on the underside are potential dangers.

Mahon: Every great new development offers a risk as well as a reward. Another one of the fundamental questions is the use of these sophisticated technologies in weapons of destruction. Joel Yudkin is with a group called the Mid-Peninsula Conversion Project. They suggested that some of the defense-related contractors in Silicon Valley give thought to redirecting their technologies to ones that <u>nurture</u> us. All technology

comes out of the human environment. We should never overlook that. And the best technologies will always be those that nurture the human environment rather than threaten it.

TFCC: It takes money to get a lot of these things started and the government has the money. What influence is that having on Silicon Valley, and on our society as a result?

Mahon: The R&D budgets could currently absorb, for military use, the graduate of every school of science and technology for the rest of this decade. Which means that you don't have scientists and engineers available to do research in a whole range of other fields that need attention, like medical research, or research on more advanced, efficient means of mass transportation. Maybe someday these will benefit from the trickle-down of technologies developed for the military. But to devote the amount of effort that we are to military-related work when so many other areas need research as well, could be said to be a misappropriation of technology.

TFCC: Let's talk about some people in Silicon Valley who are dealing with, as you call it, "worlds beyond imagining".

Mahon: One is John Billingham who is the head of NASA's Search for Extraterrestrial Intelligence program, or SETI. Here is a man who deals daily with the question of how to pick up signals from alien intelligent communities. And there's Andy Dufner, who was a Jesuit and also has advanced degrees in high energy physics. He talks about the realms where physics and theology intersect, which is probably the furthest out field imaginable because it touches on the most profound issue that there is. The subject is actually is at the center of our whole sense of who we are because we are physical entities but we also have a soul. And how those two come together is an issue that has puzzled us for thousands of years. Perhaps these technologies are pointing in directions are going to help us come to a better understanding of that.

TFCC: It sounds like you have an optomistic view of the opportunity that is upon us now in Silicon Valley.

Mahon: I'd like to be optimistic. But realistically I would say that it's a dead heat between whether these technologies are going to snuff us out in the next ten years or whether somehow we're going to acquire the wit and the intelligence to know how to deal with them and use them to nurture ourselves. We're going to have to come to a sense of how <u>values</u> affect technology. Technology doesn't exist in a lab, but it exists in daily life. And one way or another it impacts life. We need to understand that and then take steps to prevent technologies from developing on their own into life-threatening devices.

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